

The invention relates to a catalyst that contains at least one matrix, at least one zeolite and at least one hydro-dehydrogenating element that is located at the matrix (deposited on the catalyst or contained in the matrix), in which the zeolite contains in its porous network at least one element of group VIB and/or group VIII. Said hydro-dehydrogenating element preferably belongs to group VIB and/or to group VIII of the periodic table. The catalyst contains at least one promoter element )phosphorus, boron, silicon). The invention also relates to the use of this catalyst for the transformation of hydrocarbon fractions, in particular hydrorefining and hydrocracking.